

1 WHAT IS CLAIMED IS:

2 1. A diagnostic apparatus of a valve timing control system  
3 for variably controlling a valve timing by adjusting a rotational  
4 phase between a crankshaft and a cam shaft of an engine, comprising :

5 means for detecting a fluctuation of engine speeds of  
6 said engine following a change of engine operating conditions  
7 and for calculating a diagnosis value based on said fluctuation;  
8 and

9 means for comparing said diagnosis value with a  
10 threshold value and for judging that a failure occurs in said  
11 valve timing control system in case where said diagnosis value  
12 exceeds said threshold value.

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14 2. The diagnostic apparatus according to claim 1, wherein  
15 said diagnosis value is an integral value of said fluctuations  
16 of said engine speeds.

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18 3. A diagnostic apparatus of a valve timing control system  
19 for variably controlling a valve timing by adjusting a rotational  
20 phase between a crankshaft and a cam shaft of an engine, comprising :

21 means for detecting a fluctuation of engine speeds  
22 following a change of engine operating conditions and for  
23 calculating an elapsed time until said fluctuation converges;  
24 and

25 means for judging that a failure occurs in said valve

1 timing control system in case where said elapsed time exceeds  
2 a preestablished time.

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